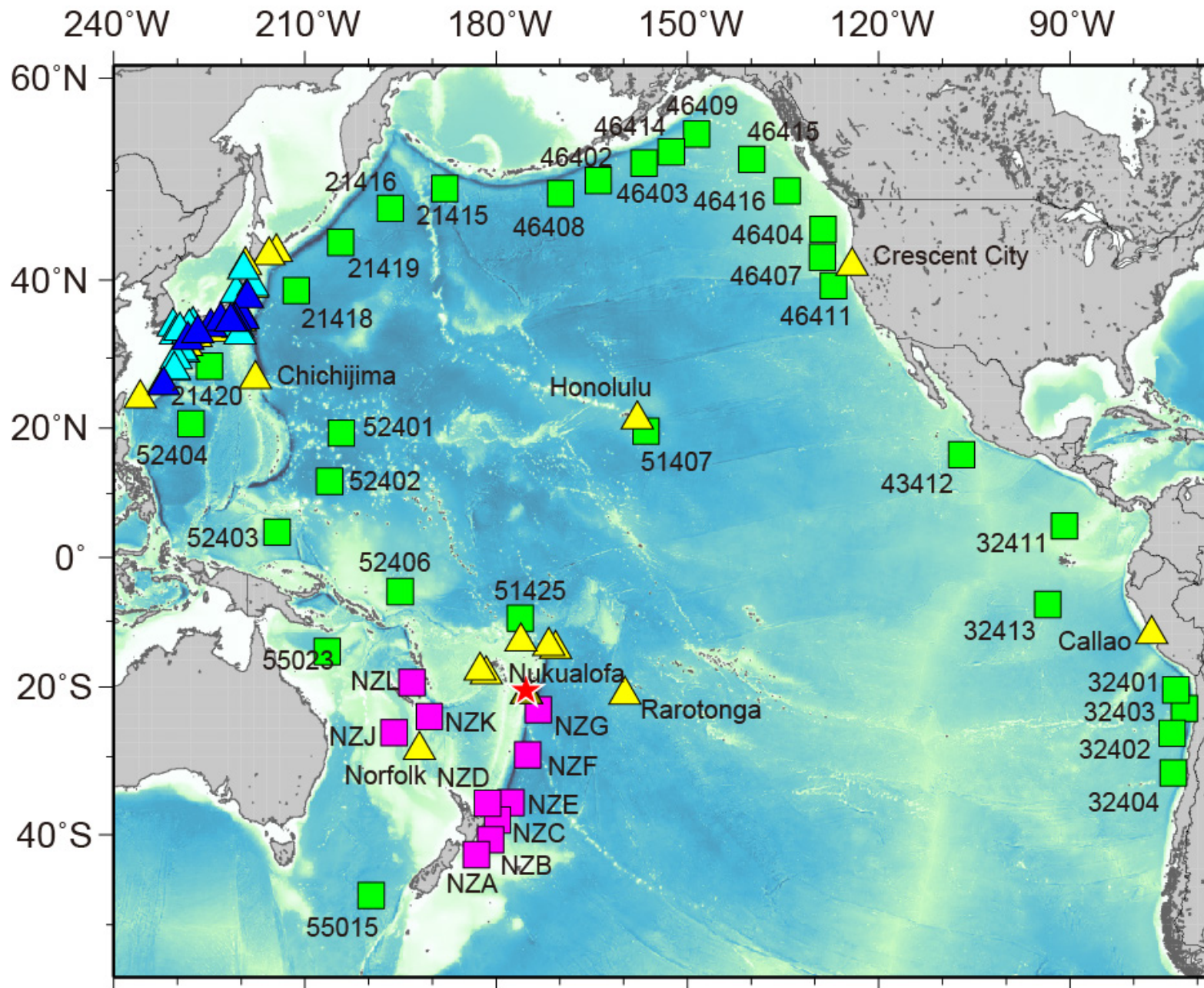


2022年1月15日 トンガ噴火に 伴う津波のシミュレーション

建築研究所 国際地震工学センター 藤井雄士郎
東京大学地震研究所 佐竹健治

<https://iisee.kenken.go.jp/staff/fujii/Tonga2022/tsunami.html>

DART と 検潮観測点



海底地形データ
GEBCO 2014
(30 arc-sec)

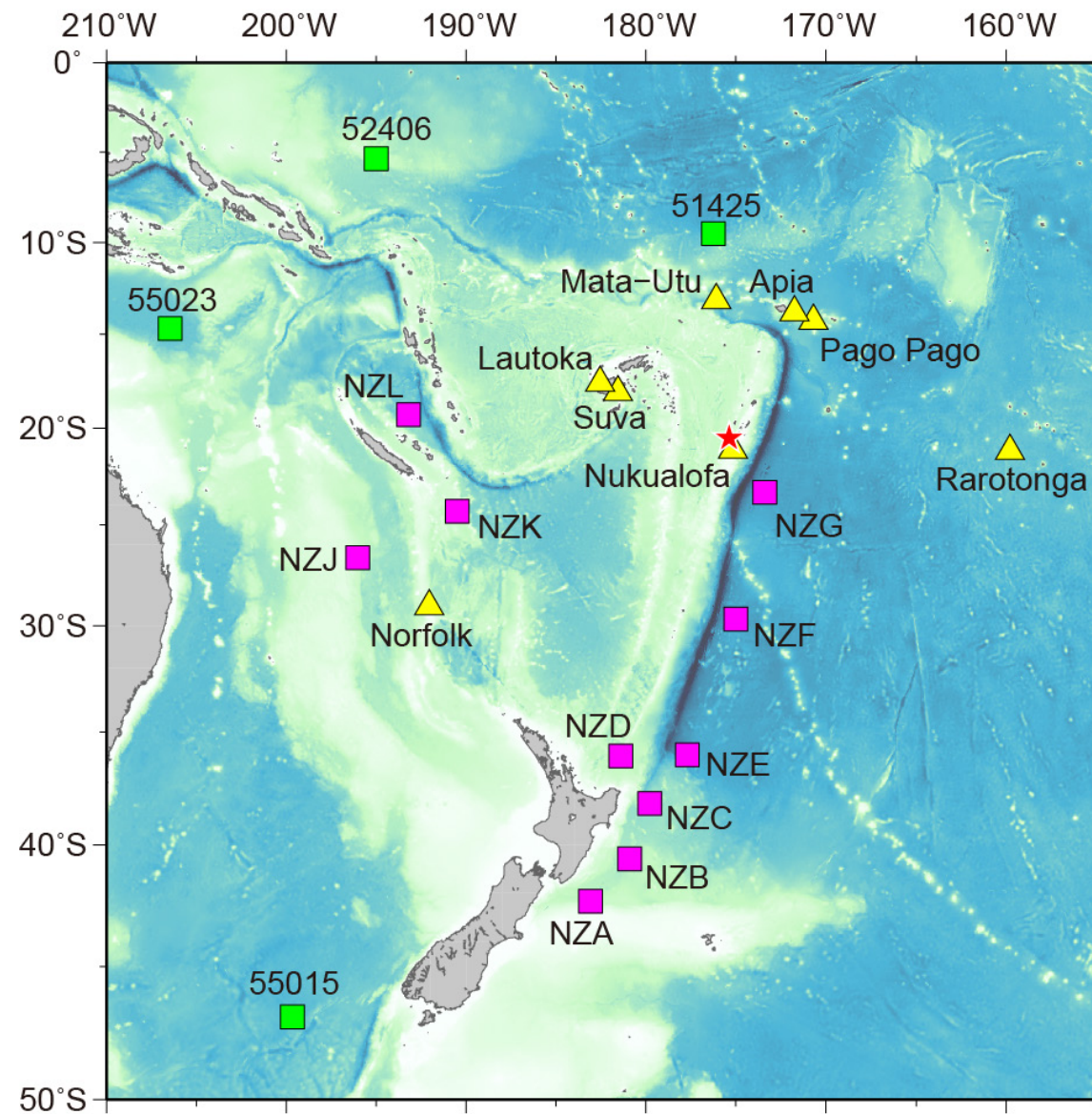
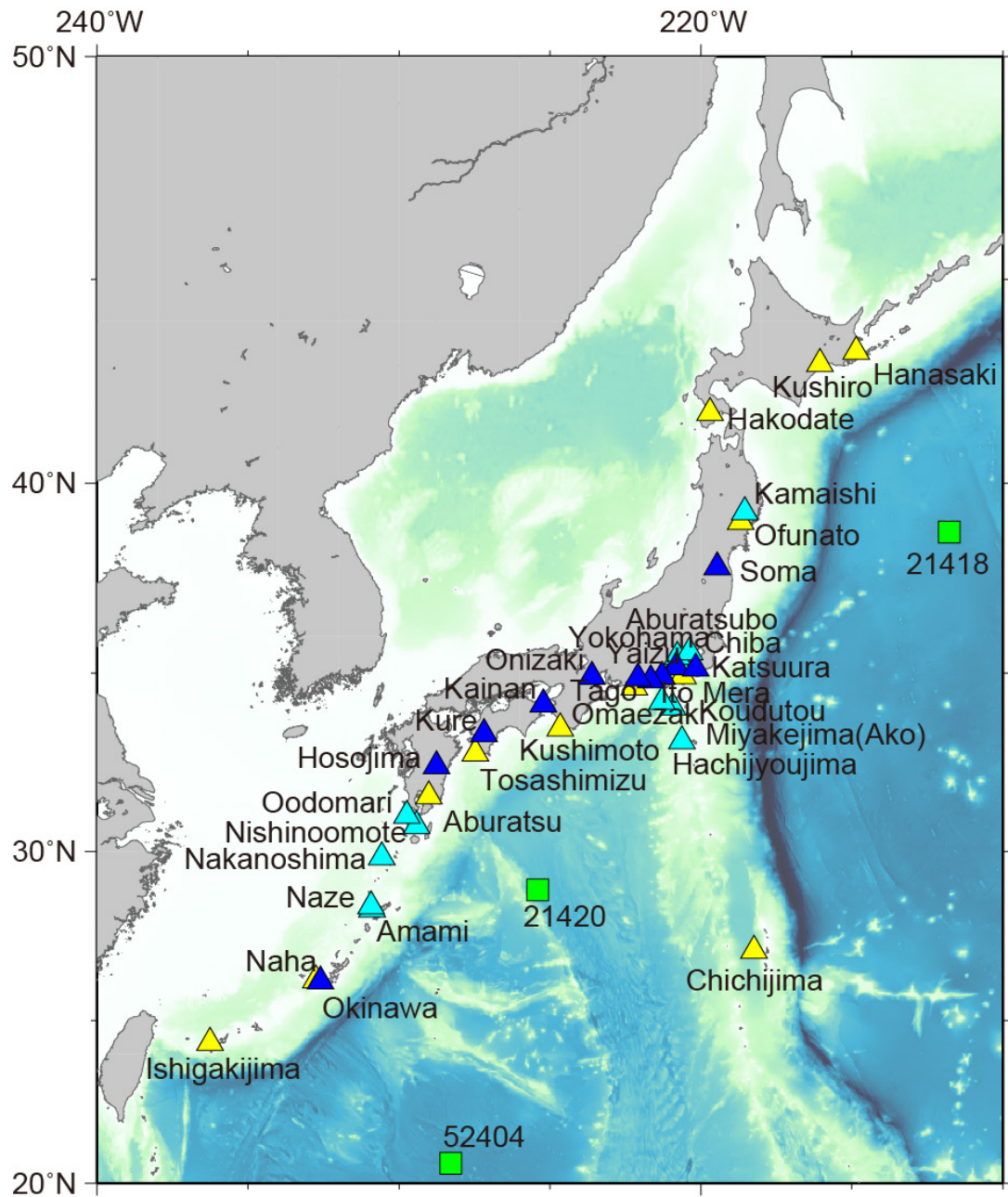
シミュレーション格子
24 arc-sec (約700m)

格子数 25,800 X 17,400

計算間隔 1秒

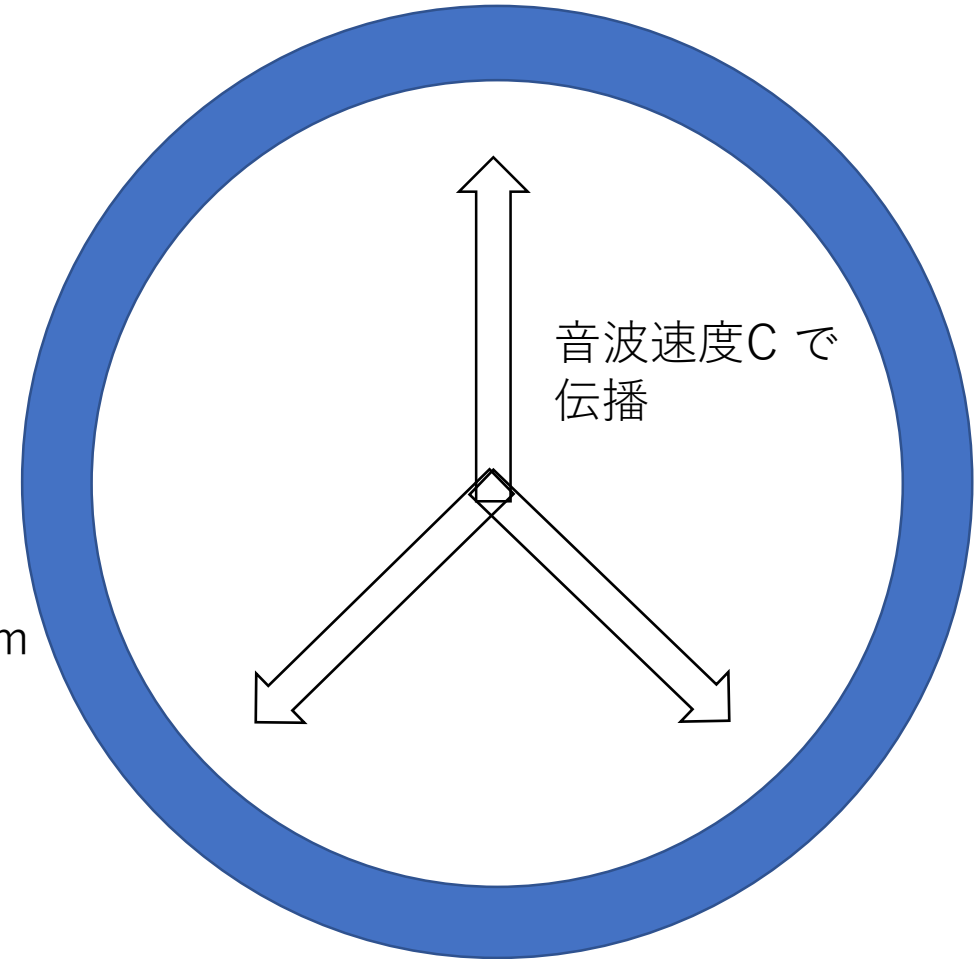
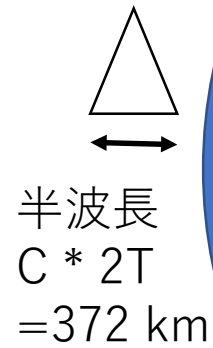
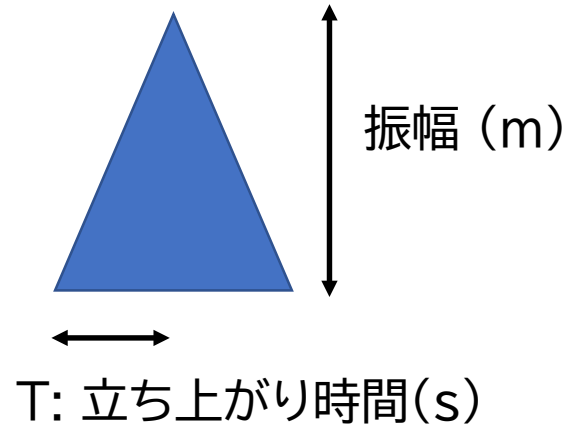
計算時間 20時間

DART と 検潮観測点



波源から広がる水位変化

Case 1

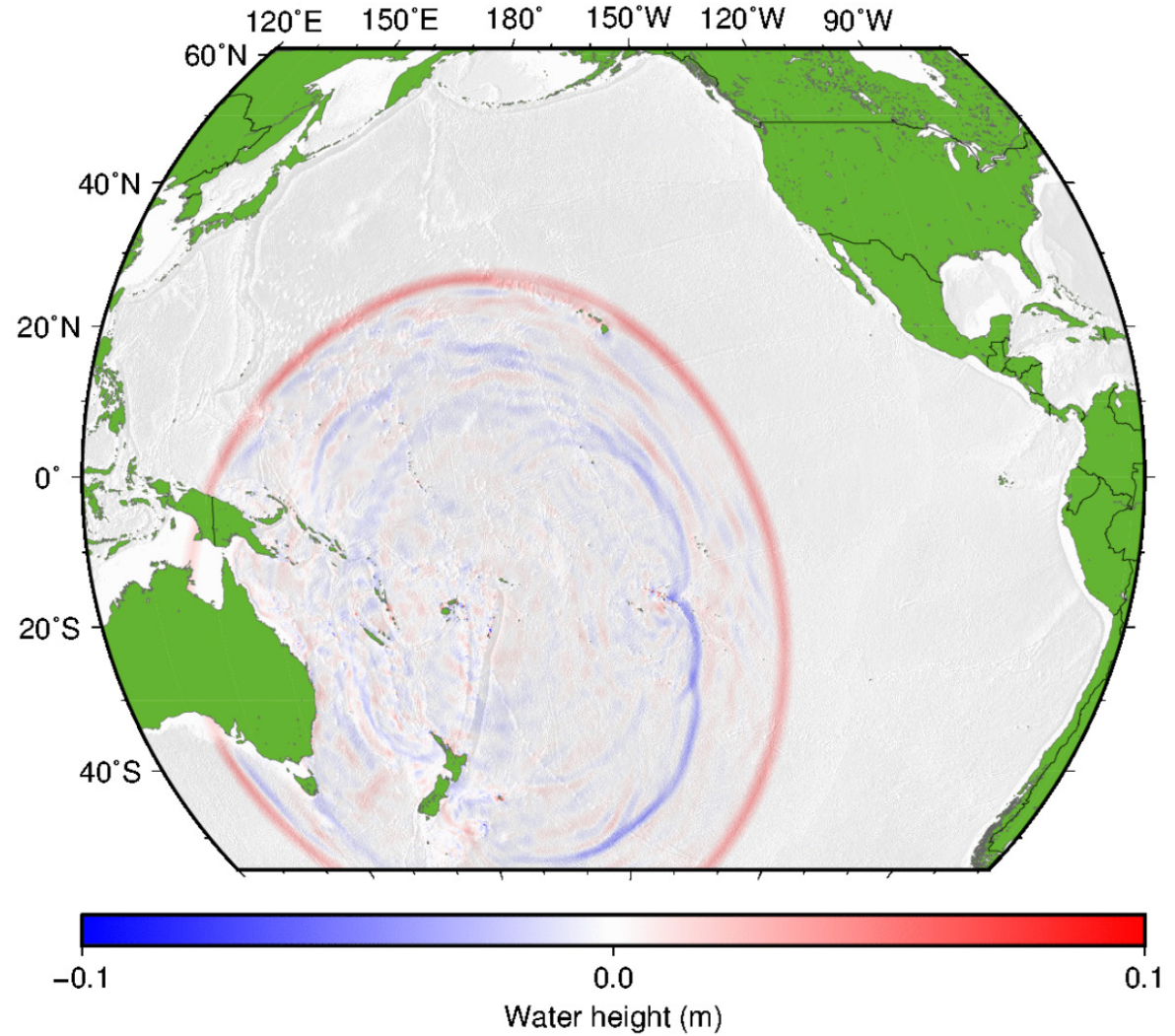


振幅 $\sim \text{amp0} * 1/\sqrt{R * \sin \Delta}$
R: 地球半径, Δ : 震央距離(角度)

amp0: 4.0 m, C: 310 m/s, T: 600 s

Animation of Tsunami Propagation

2022 Tonga Tsunami 00290 min



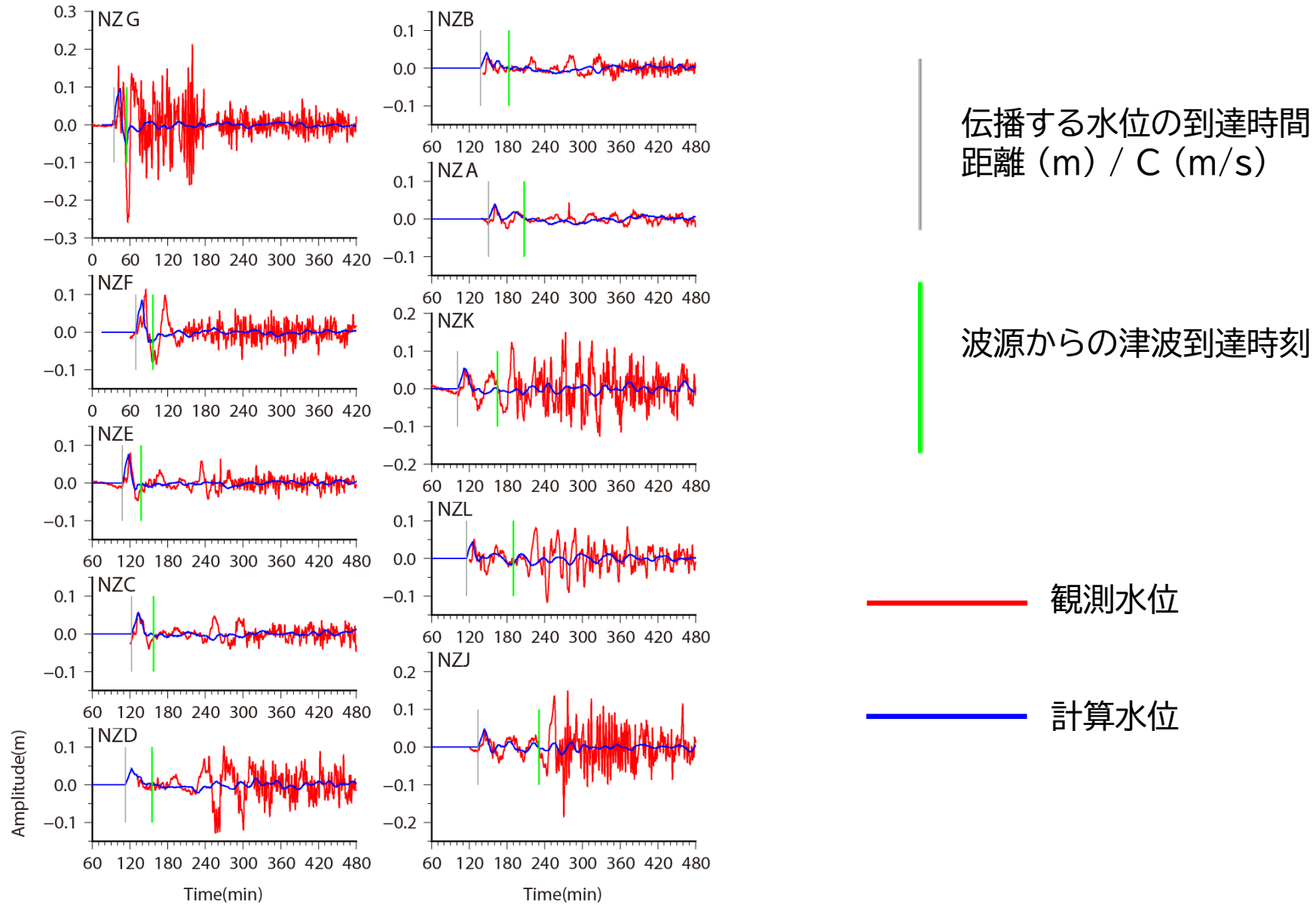
Case 1, 24 arc-sec
amp0: 4.0 m
C: 310 m/s
Rise time: 600 s

[BACK](#)

https://iisee.kenken.go.jp/staff/fujii/Tonga2022/AP/tsunami_prop_24c.html

Case 1

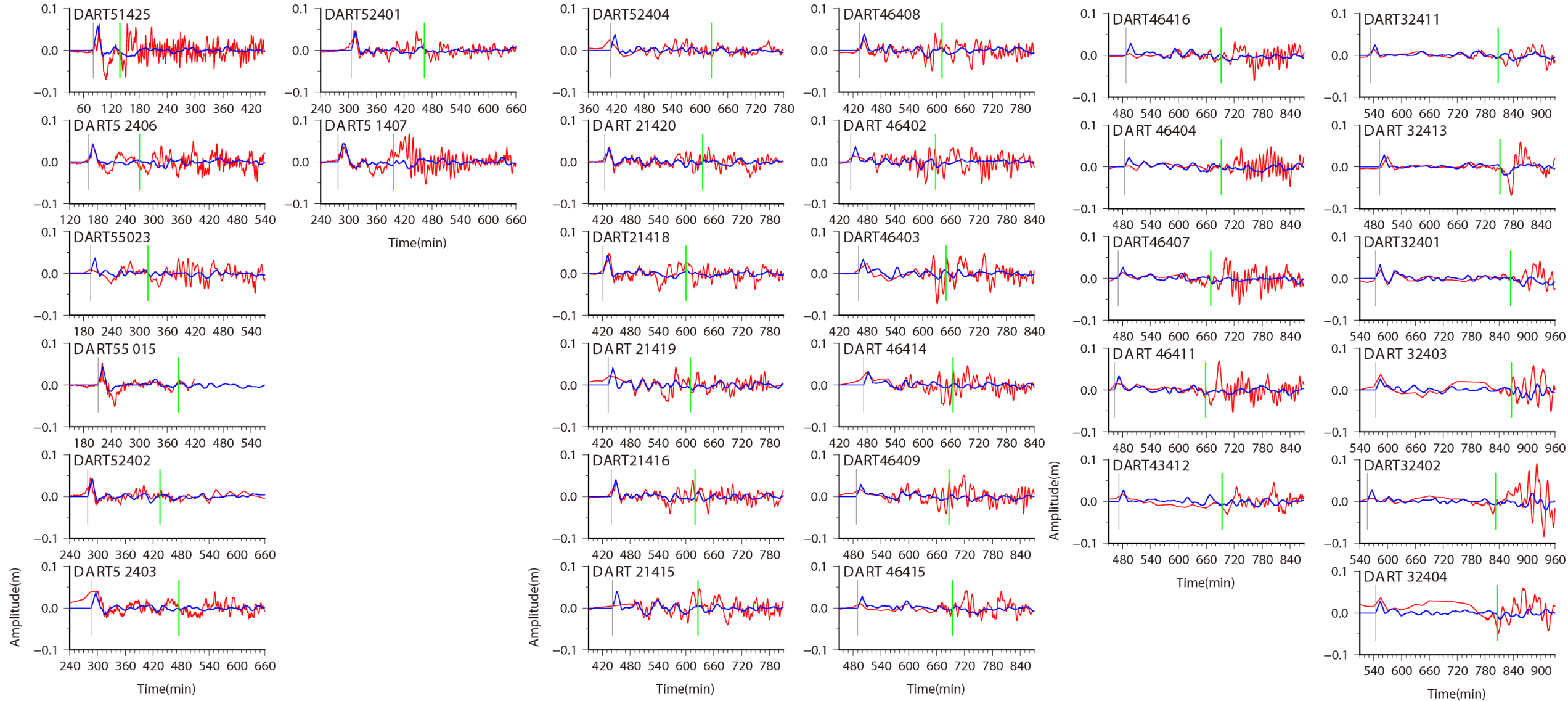
DART (New Zealand)



時間原点: 04:00 (UTC), 仮定した発生時刻: 04:14:45, amp0: 4.0 m, C: 310 m/s, Rise time: 600 s

Case 1

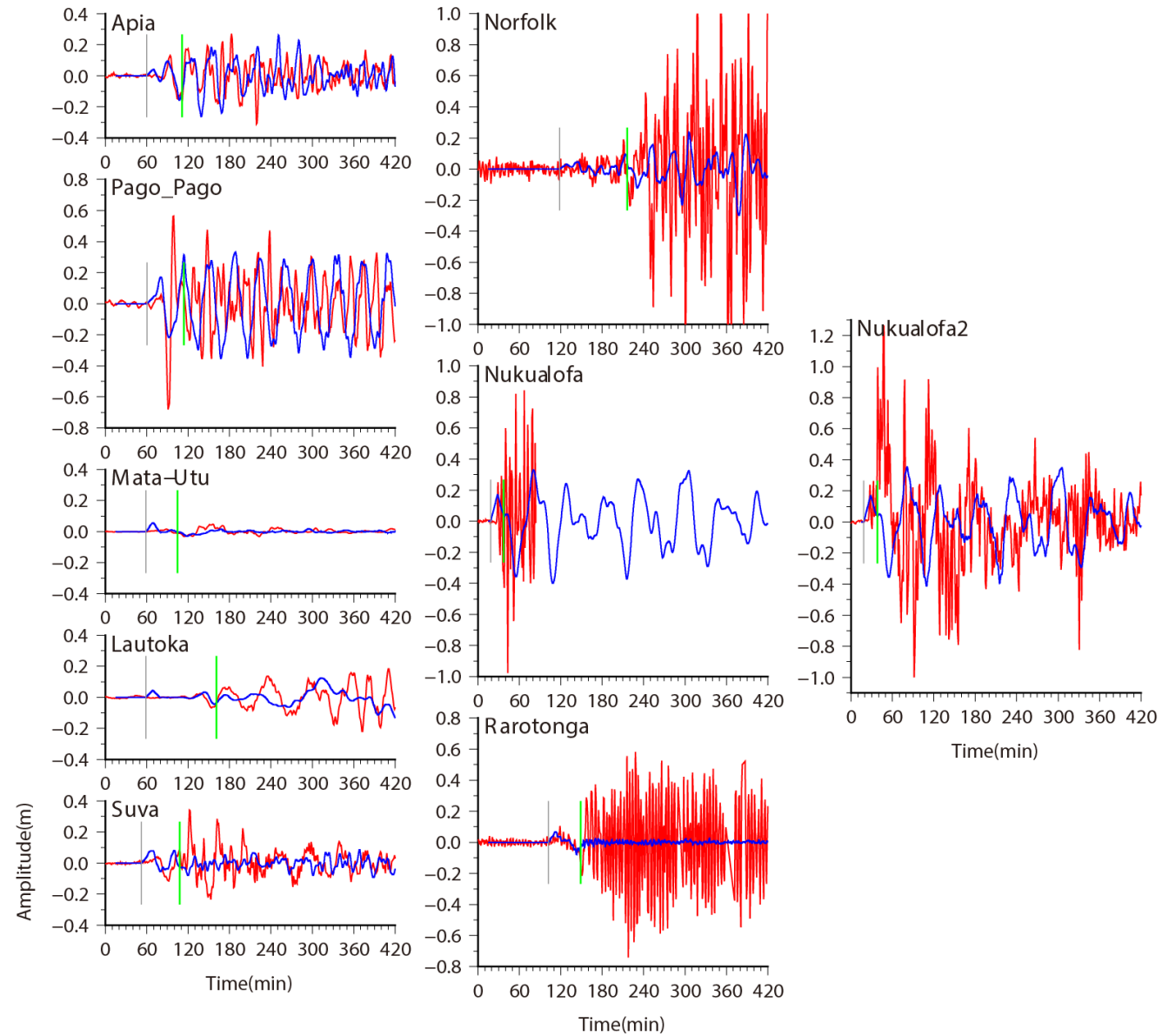
DART (NOAA)



時間原点: 04:00 (UTC), 仮定した発生時刻: 04:14:45, amp0: 4.0 m, C: 310 m/s, Rise time: 600 s

Case 1

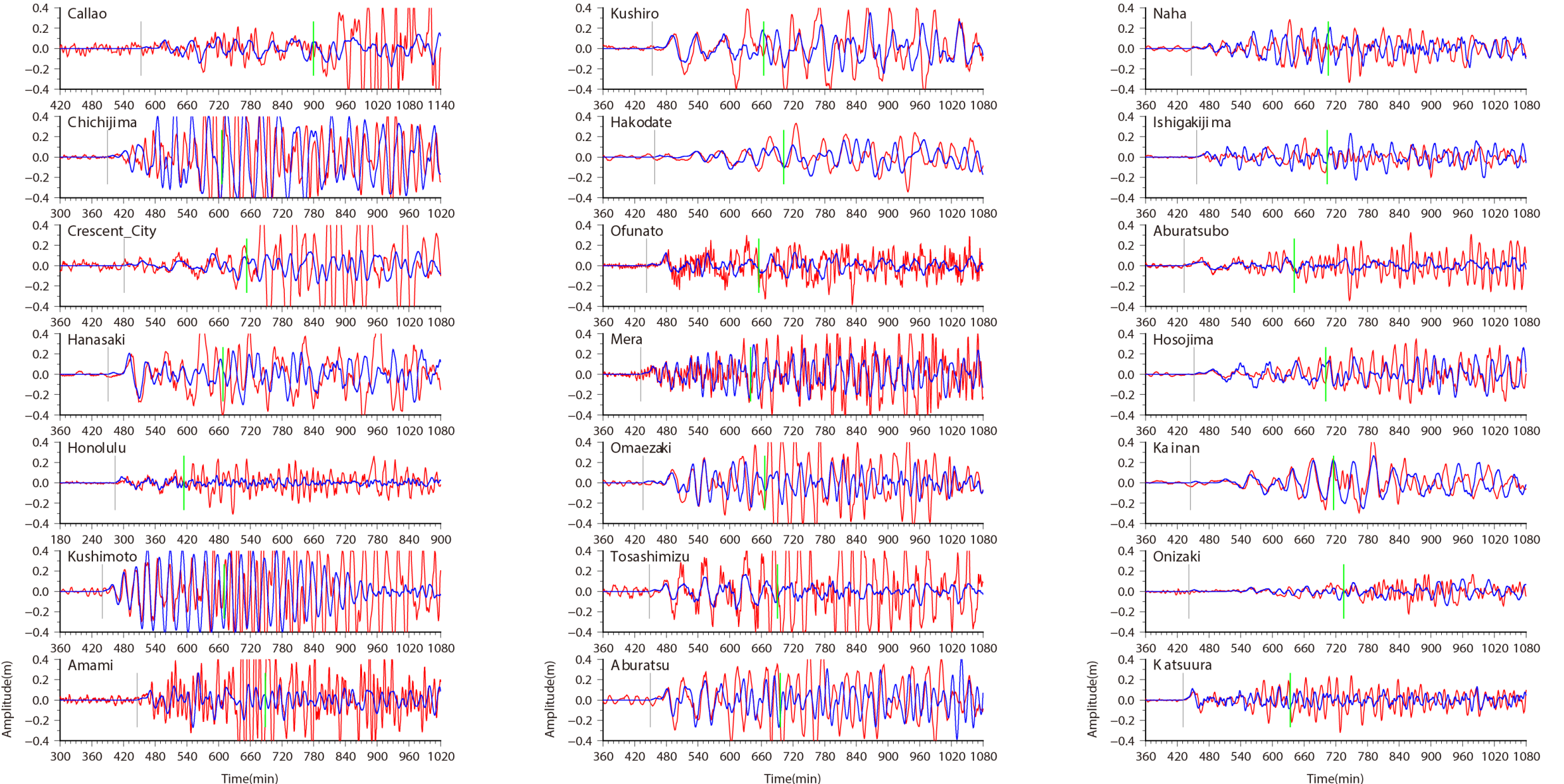
Tide Gauges (Near-field)



時間原点: 04:00 (UTC), 仮定した発生時刻: 04:14:45, amp0: 4.0 m, C: 310 m/s, Rise time: 600 s

Case 1

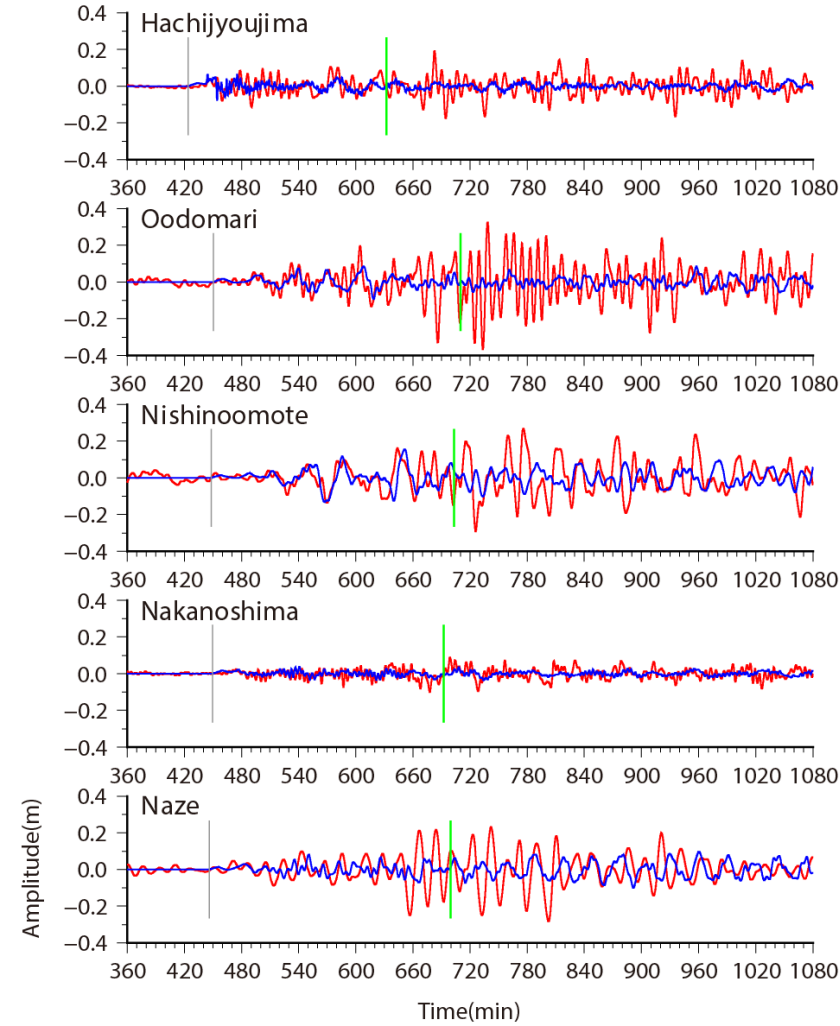
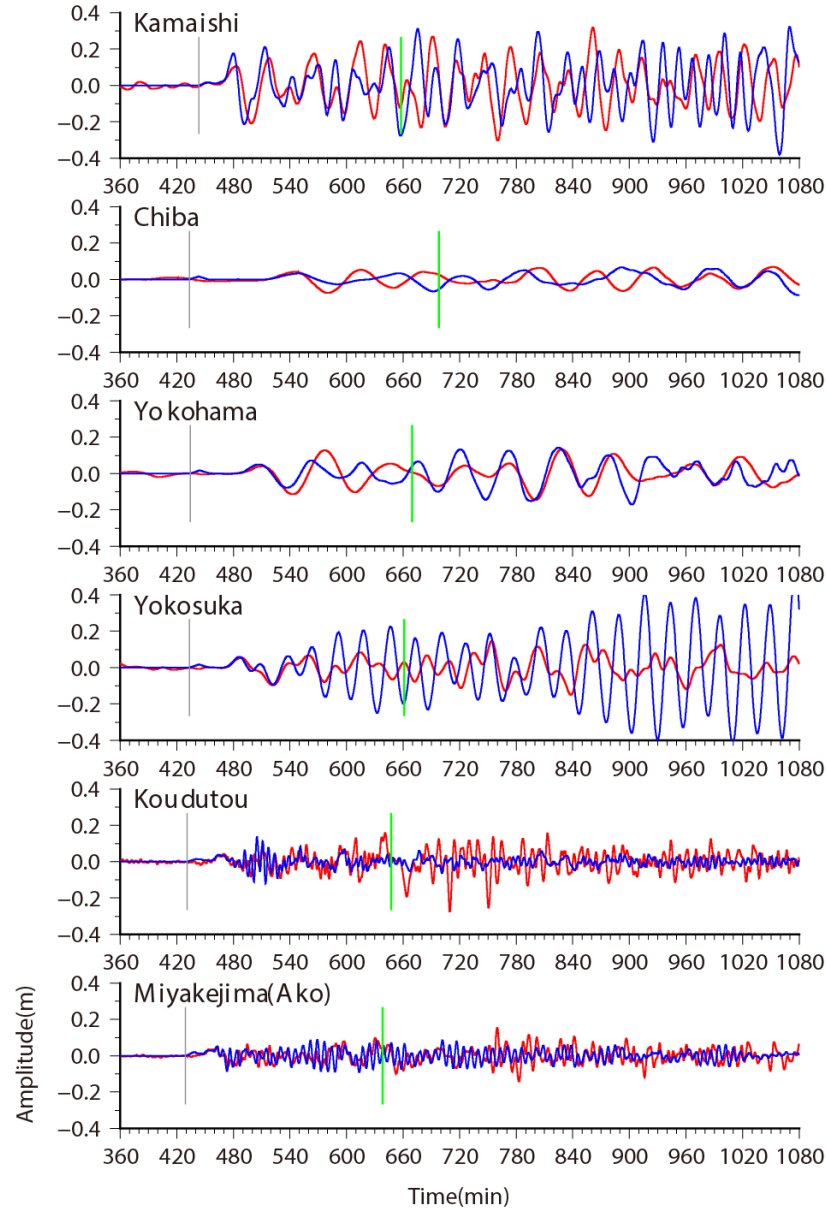
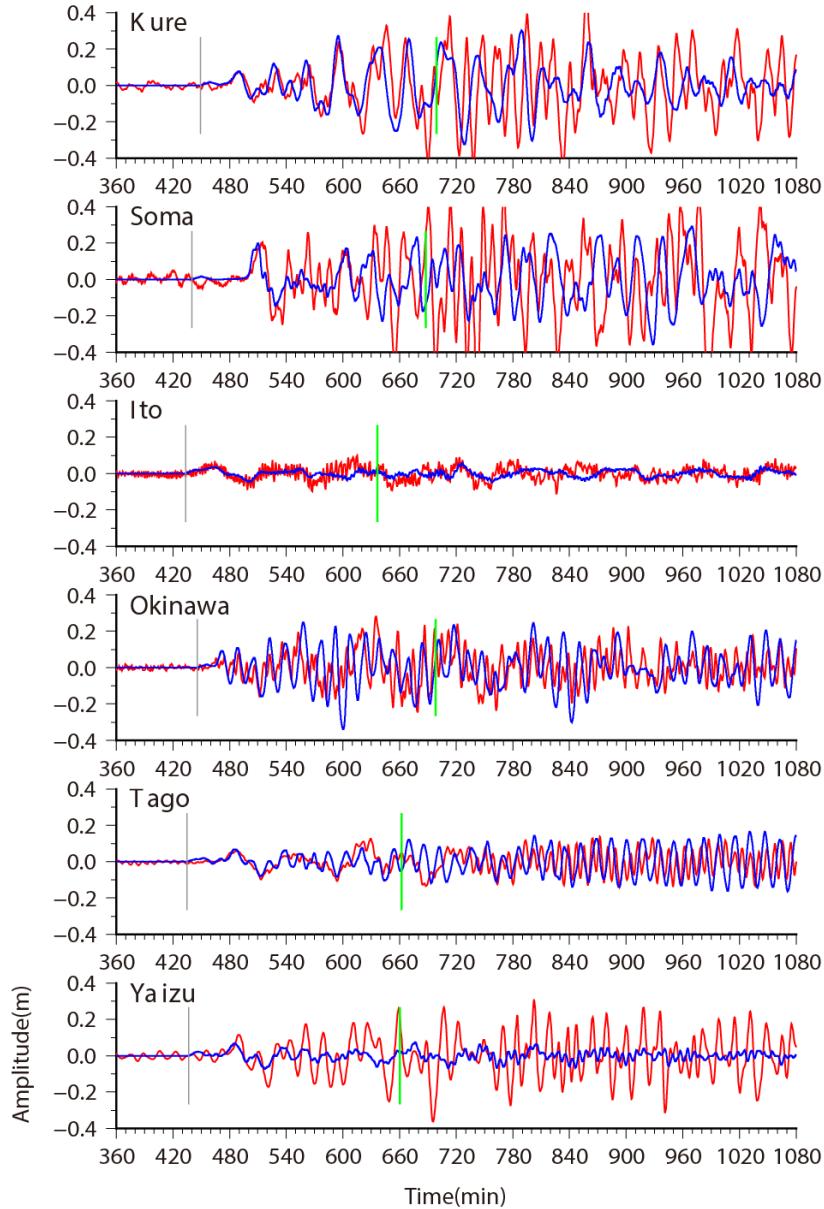
Tide Gauges (Far-field)



時間原点: 04:00 (UTC), 仮定した発生時刻: 04:14:45, amp0: 4.0 m, C: 310 m/s, Rise time: 600 s

Case 1

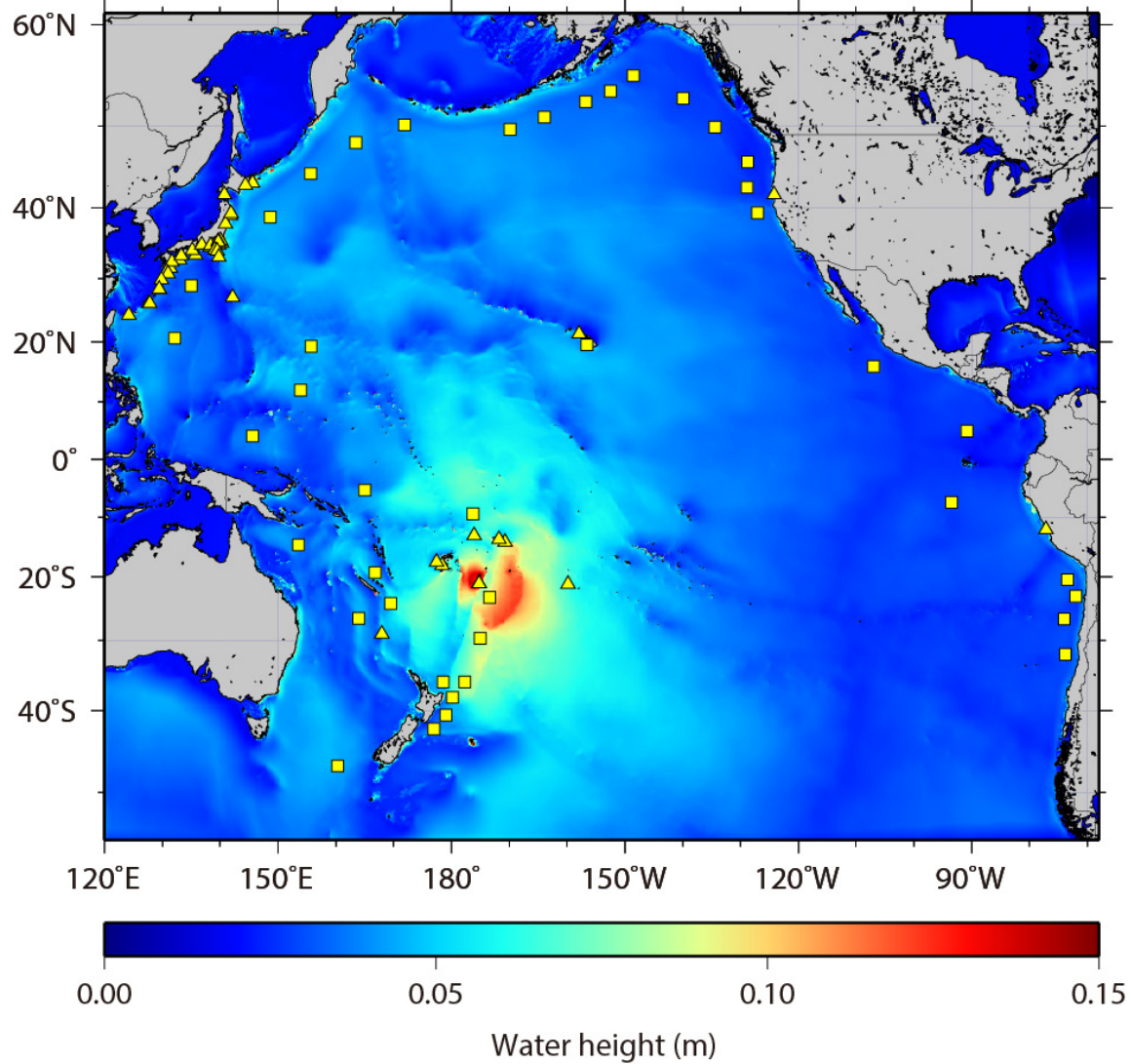
Tide Gauges (Far-field)



時間原点: 04:00 (UTC), 仮定した発生時刻: 04:14:45, amp0: 4.0 m, C: 310 m/s, Rise time: 600 s

最大水位分布

Case 1, Rise time: 600 s



波源付近のみの水位変化

